

PV Off-Grid Market Trends and Business Opportunities in Southeast-Asia

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www.renewables-made-in-germany.com

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Brief Introduction

to the Project Development Programme (PDP)

www.renewables-made-in-germany.com

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PDP: Targets and Approach



Target Support of business partnerships between German and local companies and the development of lighthouse projects in developing and emerging countries

Approach Strategic market development: regional, long-term and holistic linkage of all instruments of the 'renewables – Made in Germany' initiative, focused on local industry dynamics

Target Groups Project developers, manufacturers, distributors, operators – in Germany and abroad

Technologies All renewable energy technologies, particularly photovoltaic, biomass and biogas

Added Value GIZ professional expertise and networks with policy-makers, private sector and associations

PDP: Targets and Approach

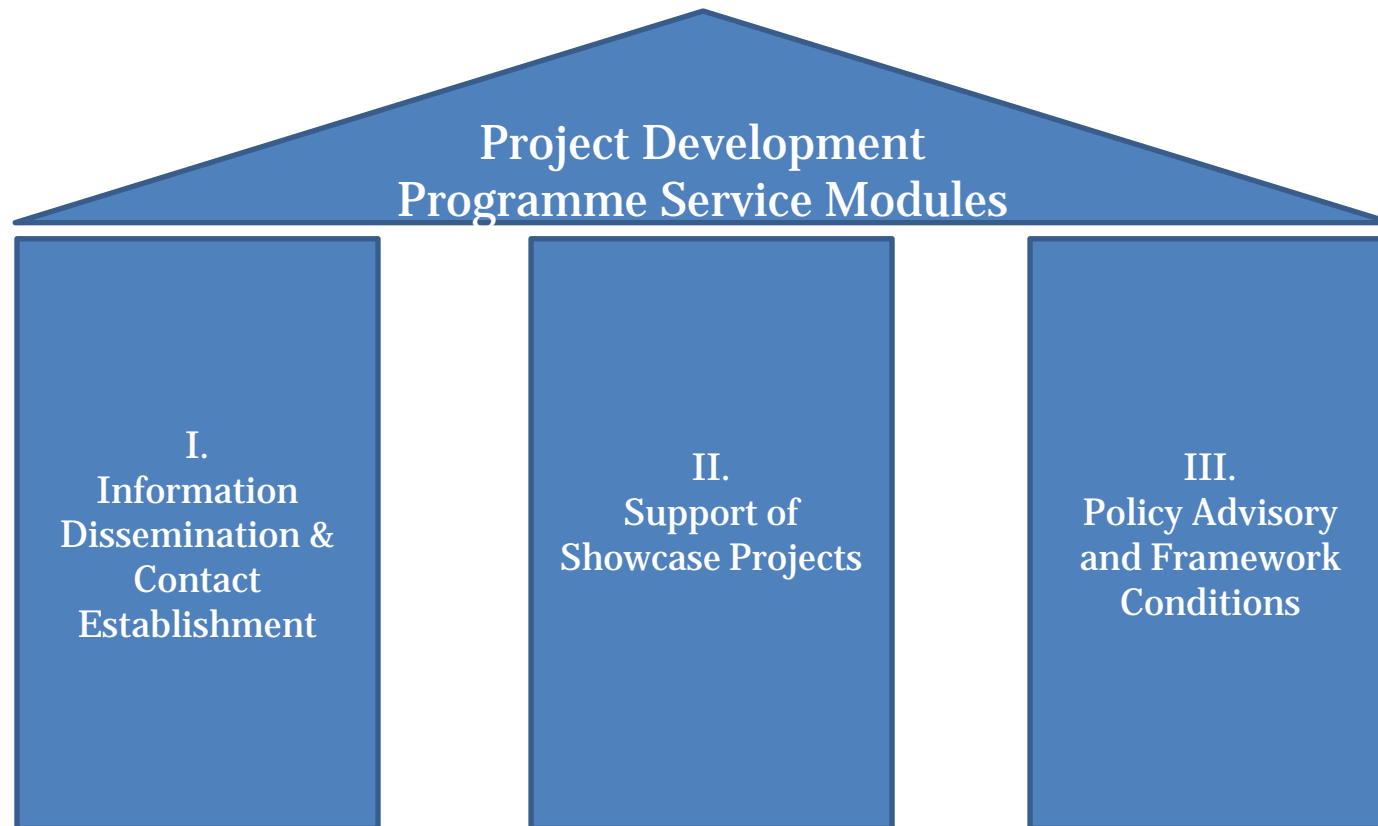
Sponsor Federal Ministry for Economic Affairs and Energy within the 'renewables – Made in Germany' initiative

Partners Ministries, rural electrification agencies, regulatory bodies, renewable energy associations

Target Countries Indonesia, Philippines, Thailand, Vietnam



PDP: Services



Off-Grid Trends and Business Opportunities in South-East Asia

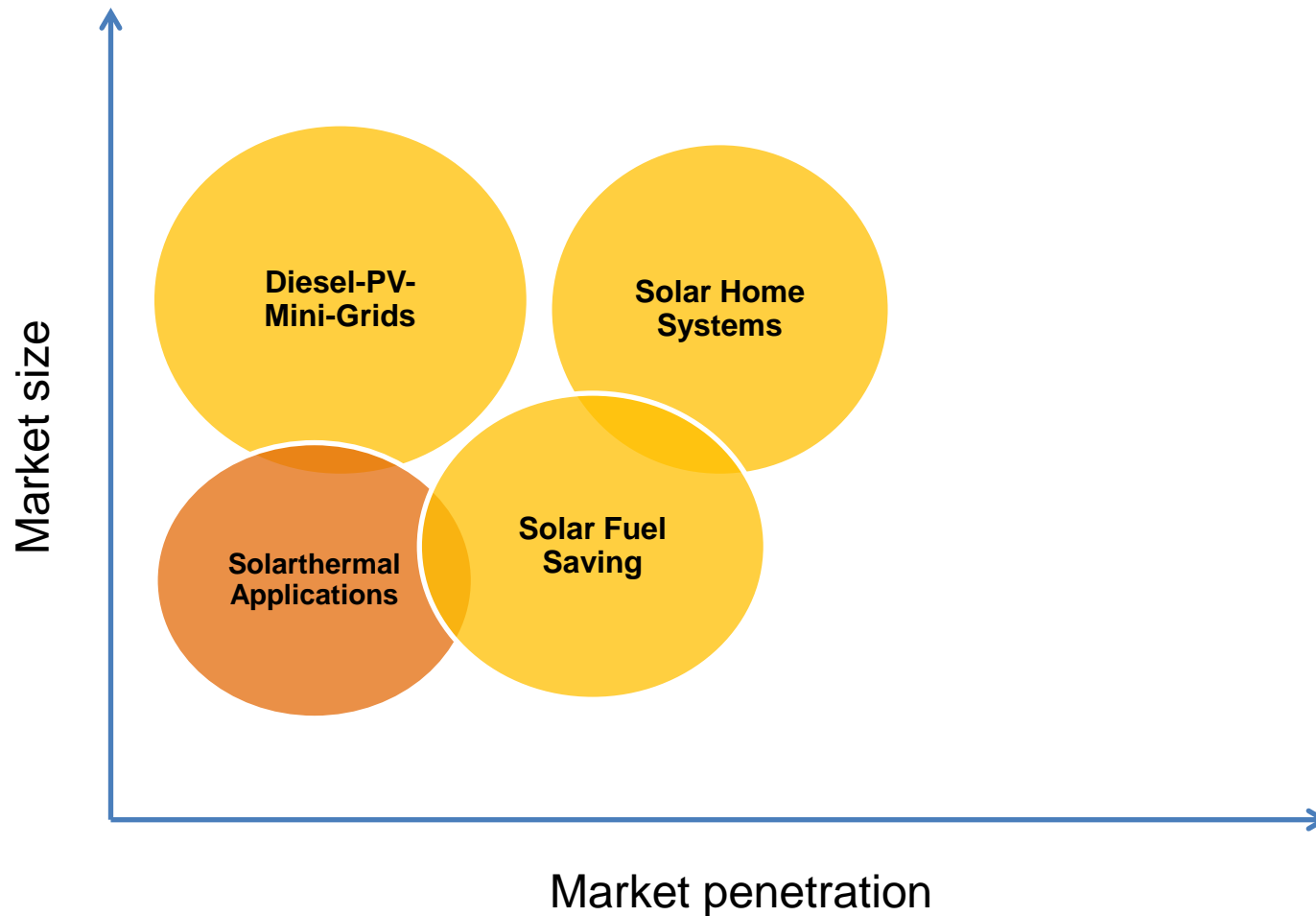
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South-East Asia: Off-Grid Market Segments



South-East Asia: Current Situation

- **Scattered island population**
Indonesia, Philippines and Thailand comprise together more than 24,000 islands
- **Almost 100 mio without access to electricity**
~90 mio people living without electricity supply in Indonesia alone
- **Diesel-grids**
wide parts of the countries are supplied by small diesel-grids
- **Options to economize diesel**
policy-makers and customers seek for options to reduce diesel costs , even though fossil fuels are subsidized
- **High economic growth and increasing electricity demand**

South-East Asia: Market Segments

Solar Home Systems

- **Growing demand and government incentives**
from 2005 to 2009 more than 70,000 solar home systems have been installed in Indonesia
- **Growing purchasing power**
additionally, purchasing power of the population has been growing
- **Public programmes**
 - Philippines: 2012 DoE Rural Electrification Programme
electrification of 370,000 households p.a. until 2017 incl. 20 – 300 Wp SHS
 - Indonesia: institutions cooperate with NGOs, government procurement accreditations

South-East Asia: Growing Market Segments

PV-Hybridisation of Diesel-Grids

- **Electricity supply**
Apart from main islands, electricity is mainly supplied through diesel-powered island grids (30,000 diesel-systems in Indonesia)
- **High generation costs through diesel (up to 0.3 €/kWh)**
due to transportation costs for diesel, generation costs are high



South-East Asia: Growing Market Segments

PV-Hybridisation of Diesel-Grids

- **Government programmes**

- Indonesia: “1000 Island Program” (phase I 2014, 300 mio USD loan , ~35 MWp),
additional institution-wide ~200 mio USD budget for off-grid electrification;
Ministry of Energy Programme (190 PV-battery systems with 15 kWp 2012/2013), PV potential at PLN = 1,800 MW
- Philippines: Small Power Utilities Group electrifies areas off the transmission grid,
private sector participation (“Qualified Third Parties” as franchisees of distribution company) encouraged, subsidies in place

South-East Asia: Growing Market Segments

Indonesia Capacity of Diesel Generators



South-East Asia: Growing Market Segments

Off-Grid Areas in the Philippines

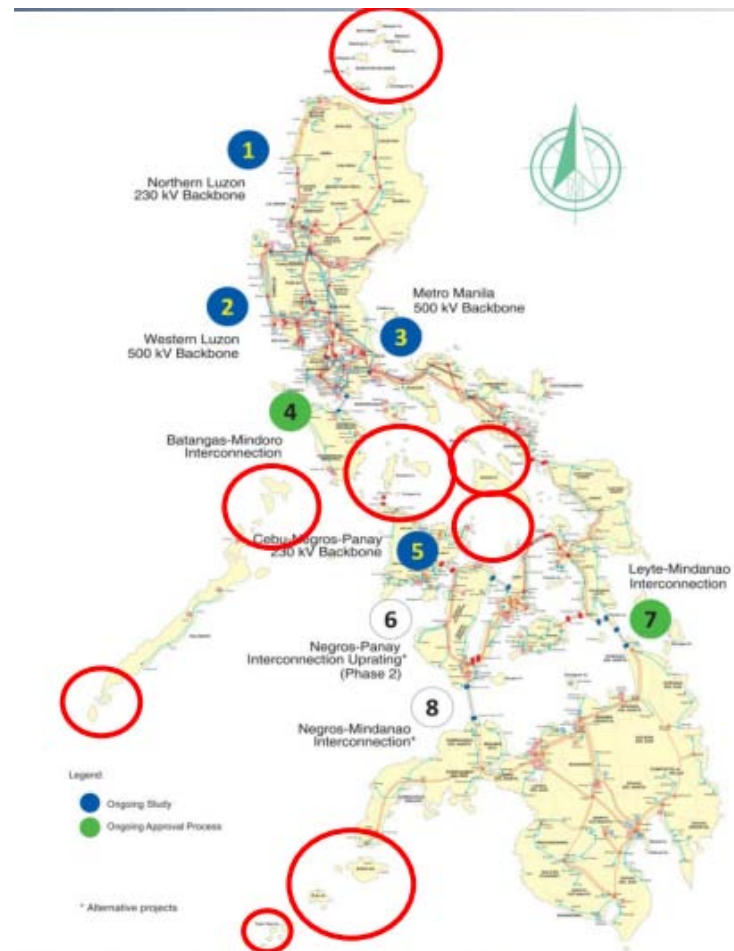


Abb. 3: Stromübertragungsnetz und Ausbauziele (NGCP, 2012).

South-East Asia: Trending Market Segments

PV-Diesel Systems / Fuel-Saving Concept

- **Growing industry demand**
diverse industries are seeking to off-set their diesel costs with PV solutions, in Indonesia industry uses an equivalent of 1800 GWh/a of diesel, 10% PV replacement = 120 MWp
- **Relevant industries look for applications (1 kWp – MWp)**
tourism (economization and eco-labelling), mining, solar cooling / ice-making for fishery industry, transceiver stations, agricultural companies
- **Economic competitiveness possible**
particularly depends on exact location, replication and standardization potential, service structure needs to be given

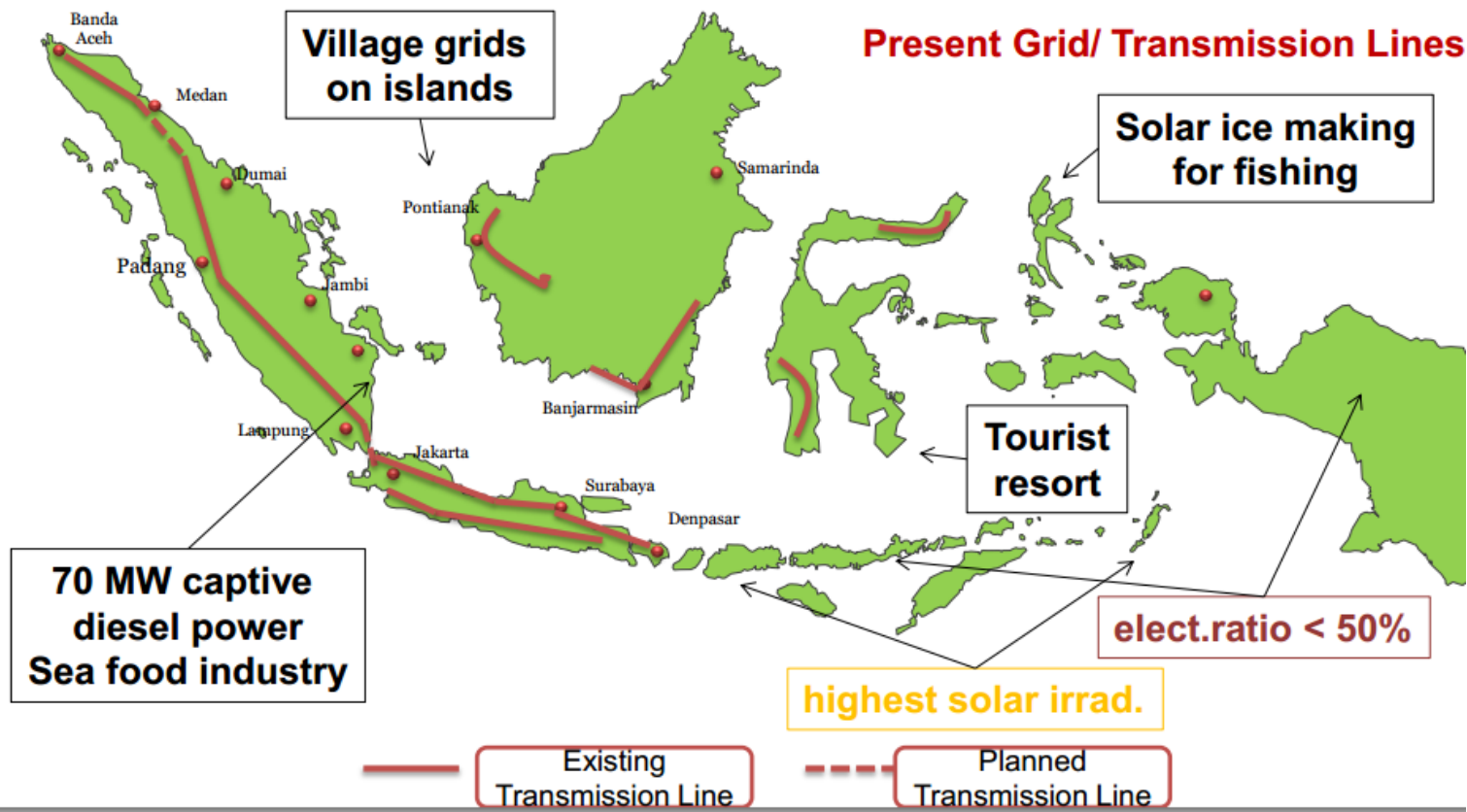
South-East Asia: Trending Market Segments

PV-Diesel Systems / Fuel-Saving Concept

- **Investment security**
due to high costs, no fast expansion of diesel grids from the national operators expected
- **High interconnection costs**
- **Administrative effort lower**
since PV-diesel systems for self-consumption do not feed in, administrative efforts are lower

South-East Asia: Growing Market Segments

PV-Diesel Systems Potential Indonesia



South-East Asia: RE Frameworks

Challenges

- Tender and business processes not always transparent
- Partly import duties and local standards for technical components
- Lack of expertise
- Lack of operation skills and maintenance

South-East Asia: RE Frameworks

PDP's response

- Tender and business processes not always transparent → **advisory on the reduction of administrative barriers**
- Partly import duties and local standards for technical components → **establishment of partnerships with companies from Germany focusing high product and service quality**
- Lack of expertise → **capacity building for potential partners of German companies through workshops and trainings**
- Lack of operation skills and maintenance → **capacity building during the implementation of showcase projects**



PDP: Activities in 2014

Join our upcoming PV Activities!

- 13 – 17 October 2014: AHK business trip “Grid-Connected PV in Thailand”, Thailand
- 29 September – 3 October 2014: German Solar Training Week, Philippines
- 6 – 10 October 2014: German Solar Training Week, Thailand



Thank you for your attention!

Regine Dietz, Team Leader

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